Surface Area, Volume, and Scaling Up

When we scaled up "creatures" made of blocks, we found that some had large surface area-to-volume ratio while others had a small surface area-to-volume ratio.

A. Which kinds of organisms or biological systems benefit from having a **large** SA:V ratio? Explain.

B. What do these "creatures" look like? (sketch 2-3 ways to get a large SA:V ratio). Explain why you would expect these shapes to give a large SA: V ratio (not a computation, but a physical reason for the SA:V ratio being large).

C. Which kinds of organisms or biological systems benefit from having a **small** SA:V ratio? Explain.

D. What do these "creatures" look like? (sketch 2-3 ways to get a small SA:V ratio). Explain why you would expect these shapes to give a small SA: V ratio (not a computation, but a physical reason for the SA:V ratio being small).